MIT SCALE RESEARCH REPORT

The MIT Global Supply Chain and Logistics Excellence (SCALE) Network is an international alliance of leading-edge research and education centers, dedicated to the development and dissemination of global innovation in supply chain and logistics.

The Global SCALE Network allows faculty, researchers, students, and affiliated companies from all six centers around the world to pool their expertise and collaborate on projects that will create supply chain and logistics innovations with global applications.

This reprint is intended to communicate research results of innovative supply chain research completed by faculty, researchers, and students of the Global SCALE Network, thereby contributing to the greater public knowledge about supply chains.

For more information, contact
MIT Global SCALE Network

Postal Address:
Massachusetts Institute of Technology 77
Massachusetts Avenue, Cambridge, MA 02139 (USA)

Location:
Building E40, Room 267
1 Amherst St.

Access:
Telephone: +1 617-253-5320
Fax: +1 617-253-4560

Email: *scale@mit.edu*
Website: *scale.mit.edu*

Research Report: MISI-2015-8
China E-Commerce Operational Model Development
Alex Armadas and Charvi Mittal

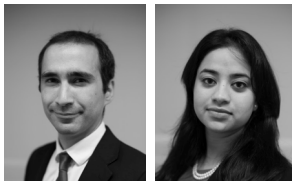
For full thesis version please contact:

Professor Shardul Phadnis
Director of Research
MISI
No. 2A, Persiaran Tebar Layar, Seksyen
U8, Bukit Jelutong, Shah Alam,
40150 Selangor, Malaysia.
Phone: +6 03 7841 4845
Email: sphadnis@misi.edu.my

China e-commerce Operation Model Development

By Alex Armadas and Charvi Mittal
Thesis Advisor(s): Dr. Ioannis Lagoudis

Summary:
This paper presents findings for developing an e-commerce model for the China market. Using a combination of case-based approach and mathematical model, this paper provides a framework for companies looking to diversify their operations from the existing brick and mortar operations. Based on synthesis of research papers, literature and company publications, a two dimensional approach of qualitative and quantitative analysis is done in order to simulate results. The paper aims to provide the operation model of e-commerce in China for a Hong Kong based US luxury fashion apparel brand.



Alex and Charvi are Masters students of MSCM program at Malaysia Institute of Supply Chain Innovation, MIT Global SCALE Network batch of 2015.
Alex holds a Bachelor's Degree in Mechanical Engineering and a Master's Degree in Industrial Engineering from UPC BarcelonaTech. He has also done a Bachelor's Degree in Economics. Prior to MSCM, he was working as an analyst in the Logistics Department at The Barcelona Food Bank.
Charvi has done B.Tech in Mechanical and Automation from IGIT, Delhi. Prior to MSCM, she was working as a supply chain manager in Maruti Suzuki India Ltd.

KEY INSIGHTS

1. A single option may not yield the optimal results. A combination of 2 or more options that facilitate multi option strategy can derive desired results.
2. Market place websites play significant role for upcoming e-commerce business in China.
3. Customer satisfaction pertaining to faster delivery is a key factor for e-commerce business in China.
4. Cross Border movement in China is a complex issue. Companies need to study it in detail before entering China market.

Introduction

Nowadays, the impact of Internet technology on the strategic and operational growth of a company is significant. By integrating virtual and physical activities to compensate for the Internet's performance limits (e.g. customers can't physically touch and test products), companies gain competitive edge. Apparel industry, viewed as one of the outstanding economic engines in history, has been radically evolving over the past 25 years due to retail consolidation, globalization and e-commerce (Mehrjoo & Pasek, 2014). The Fashion apparel company presented here has significant online retail presence and operates e-commerce business in North America, Europe, Japan, Korea and other APAC countries. The APAC e-commerce operations are centralized through Hong Kong office. Considering the growth and potential of e-commerce market in China, the company plans to launch e-commerce operations in China. However, given the complexities of China market, operational and strategic decisions become a challenge. The key objective is to devise an operational model for entering into China e-commerce market.

In a report by KPMG (Stanley & Ritacca , 2014) it is highlighted that with mere 2.1 million users in 2000 and negligible development in e-commerce applications, China has come a long way and is projected to hit $450 billion, or approximately 10 percent of total retail transactions, and by 2020, China's e-commerce market is forecasted to be large than those of US, UK, Japan, Germany and France combined together.

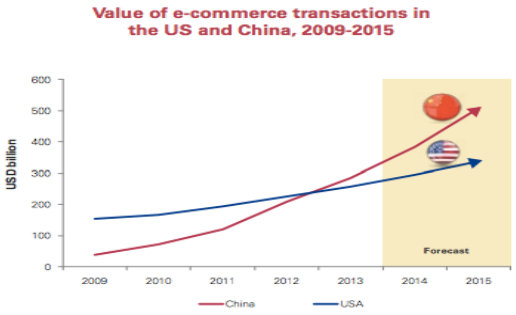


Figure 1: Growth of US and China e-commerce transactions, Source KPMG (2014

Literature Review

In the Ashridge Business School website (Ashridge Business School, n.d.) Is stated, " The operating model defines how the company will deliver the capabilities and financial outcomes required by the strategy. E-commerce has been studied from many perspectives. As an example, 878,000 entries appear in a Google scholar search when typing the word "e-commerce". Definitions are multiple: "A networked information system that serves as an enabling infrastructure for buyers and sellers to exchange information, transact, and perform other activities related to the transaction before, during, and after the transaction" (Varadajan & Yadav, 2002); "The study of digitally enabled commercial transaction between and among organizations and individuals" (Laudon & Traver, 2003). In simpler words, e-commerce is the trading of services and goods via Internet.

There are four well-known sale scenarios of e-commerce:

- Business-to-Consumer (B2C): companies sell goods and/or services to end consumers
- Business-to-Business (B2B): companies sell goods and/or services to other companies
- Consumer-to-Business (C2B): customers sell goods and/or services to companies
- Consumer-to-Consumer (C2C): companies sell goods and/or services to other customers

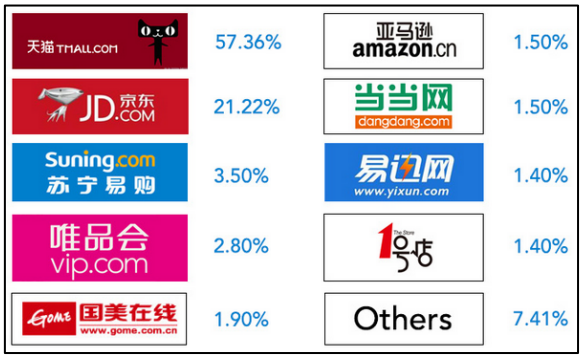


Figure 2 : Main online market places in China, Source: bysoft

The major four drivers for China e-commerce growth, as mentioned by KPMG Partner and Head, Mary Chong (Stanley & Ritacca , 2014), are: e-commerce platforms, social media platforms, digital payment platforms and mobile devices. E-Commerce platforms: Alibaba is the undisputed share leader of China's e-commerce market of B2C and C2C e-commerce. In fact, by 2016 Alibaba is positive of surpassing Walmart as the number retailed network in the world. It operates in two distinct platforms: Taobao and Tmall (Stanley & Ritacca , 2014).

Taobao is a C2C site analogous to e-bay and holds 80 percent of China's C2C market. Tmall is a B2C site and similar to Amazon. Tmall is more focused on providing unique 'mall experience' to the customers. According to Bysoft[1], Tmall "is a platform for local Chinese and international businesses to sell quality, brand name goods to consumers in mainland China, Hong Kong, Macau and Taiwan" (Bysoft, 2012). Here, brands can set up their own mall website.

Further, The last-mile delivery is a big challenge for logistics companies in China. No one company is able to cover the entire territory on its own, so everyone uses third party logistics companies, especially for tier-2 and tier-3 cities (Maosuit, 2012). Cash on delivery is more common among Chinese e-consumers.

A prior well-defined strategy for supply chain design is needed to understand and think about Trade Management Issues. Trade compliance has an impact on procuring, sourcing and engineering. If a company replicates its overseas trade processes without incorporating rules specific to China that will negatively affect operations.

Methodology

For the purpose of this thesis primary and secondary data are used. Primary data is collected through interviews with sponsor's executives. Secondary data is gathered from literature and company publications. The data sources considered are reliable reputed, accurate and contemporary in nature. The approach is to devise different operational model options by reengineering the current brick-and-mortar supply chain. The options will be assessed qualitatively based on the parameters proposed by Lang and Bressolles (2013) and quantitatively by own calculations using data from the McKinsey report and the sponsor.

The current brick-and-mortar operational model has been broken down into processes to better understand the lead-time pertaining to each process. Qualitative analysis was done by incorporating parameters such as lead-time, marketplace websites, return policies, mode of payment, CIQ risk, product variety, customers at reach and visibility. A quantitative model was developed to analyze the parameters quantitatively. A scoring system was developed and each option was scored based on parameters. Further, 8 scenarios were created combining 2 or more options to allow for multi option approach and to come up with optimal solution.

Results

The results of the quantitative model in the scenario 2 (current situation) are consistent with the dominating role

1 Bysoft is a Digital e-Commerce Agency providing end-to-end e-business solutions to brands and e-merchants in China.

that Tmall plays in the China e-commerce business. The options operated through Tmall (options 14 to 18 in the chart below) tend to provide higher profits than those that are not, in spite of the commission paid in every transaction. A lack of visibility of the website leads to low sales volume. Own-operated and Tmall Global-operated options lack visibility and are unable to attain a sales volume high enough to compensate the capital and fixed costs incurred in e-commerce operations. Furthermore, when orders are shipped from outside China, CIQ tests may delay or even destroy the shipment. Using the China stores as fulfilment centers overcomes this problem).

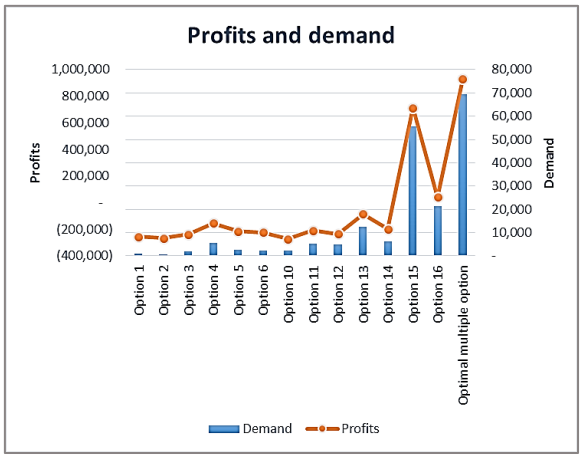


Figure 3: profits and demand, Source: authors

Combining more than one option result in increased sales and profits (optimal multiple option in the chart above). Therefore, the best option would be to operate through Tmall and fulfil orders from China stores. Customers could decide to pick up the orders at the store they chose (in some cases, shipment between stores would be needed) or have the items delivered at their homes. This optimal multiple option is a combination of options 15 and 16.

Conclusions

Overall, the research dissected that the lead-time and the website transaction capability are the priorities of e-consumers of China. Also, customers at reach and smooth custom clearance are the focus of the case company. Considering B2C online platforms such as Tmall and Tmall Global, Tmall is the preferred choice as it generates more online traffic in comparison to Tmall Global. Evidences of smooth custom clearance, shorter lead-time, high online traffic and low cost of warehousing were found in the options considering market place websites. Another set of parameters such as mode of payment and return policies are also discussed as they can play a significant role in customer satisfaction. Considering no risk of CIQ inspection for store fulfilment options and greater visibility through Tmall website, the research concludes selling through Tmall and delivery through company stores in China as the most preferred option. The mathematical model developed is robust and flexible. With replacing parameters to suit the requirements of other industries and markets, the model can be extended to a broader scale. The model is also designed in a way that it caters to the preferential weightage of parameters to adjust to the company's requirements. The paper does not provide third party logistic or the last mile delivery options in detail.

Future research can be extended to develop a tool that can help companies come up with a critical volume to decide whether to have a distribution center or not will be beneficial for deciding investments in e-commerce.

References

Alan , , 2014. CHINA TRADE MANAGEMENT Opportunities, Challenges and Best Practices. JOC Group.

Ashridge Business School, n.d. Open Porgramme: Designing Operating Models. [Online] Available at: HYPERLINK "https://www.ashridge.org.uk/executive-organisation-development/open-programmes/designing-operating-models/" https://www.ashridge.org.uk/executive-organisation-development/open-programmes/designing-operating-models/ [Accessed 18 April 2015].

Bysoft, 2012. Tmall in China. [Online] Available at: HYPERLINK "http://www.bysoftchina.com/blog/trends/t-mall-in-china/747" http://www.bysoftchina.com/blog/trends/t-mall-in-china/747 [Accessed 29 April 2015].

Laudon, K.C. & Traver, C.G., 2003. E-Commerce. Addison Wesley Publishing.

Maosuit, 2012. Logistics of Luxury and E-Commerce in China. [Online] Available at: HYPERLINK "http://maosuit.com/tech/e-commerce/logistics-of-luxury-and-e-commerce-in-china/" http://maosuit.com/tech/e-commerce/logistics-of-luxury-and-e-commerce-in-china/ [Accessed 26 April 2015]. Andre Suguiura.

Mehrjoo, & Pasek, J., 2014. Impact of Product Variety on Supply Chain in Fast Fashion Apparel Industry. In Variety Management in Manufacturing. Canada, 2014. Proceedings of the 47th CIRP Conference on Manufacturing Systems.

Porter, M.E., 2001. Strategy and the Internet. Harvard Business Review, 79(3), pp.62-78.

Stanley , & Ritacca , R., 2014. E-commerce in China: Driving a new consumer culture.

Varadajan, R. & Yadav, M.S., 2002. Marketing Strategy and the Internet: An Organizing Framework. Journal of the Academy of Marketing Science, 30(4), pp.296-312.